WATER SYSTEM

CHAPTER 148

ARTICLE I
CONTROL OF BACKFLOW AND CROSS-CONNECTIONS

[HISTORY: Adopted by the City Council of the City of Dover: Art. I, 9-28-83 as Ord. No. 27-83. Amendments noted where applicable.]

General References

Public Health - See Ch. 116.
Plumbing - See Ch. 135.
Sewers - See Ch. 147.

ARTICLE I
CONTROL OF BACKFLOW AND CROSS-CONNECTIONS
[Adopted 9-28-83 as Ord. No. 27-83]

148-1. Statutory authority; responsibility of Water Department.

This Article is adopted pursuant to the provisions of RSA 148, RSA 148-8, the B.O.C.A. Plumbing Code, Section P- 1605.11, the regulations of the New Hampshire Water Supply and Pollution Control Commission and the regulations of the Dover Water Department, Section 7. Under these rules and regulations, the Water Department has the primary responsibility for protecting the public water supply from the backflow of dangerous substances which would endanger the public health or physically damage the public water system.

148-2. Purpose; responsibility of Director.

A. Purpose. The purpose of this Article is to:

(1) Protect the public potable water supply of the City of Dover from the possibility of contamination or pollution by isolating within its customers' internal distribution system(s) or its customers' private water system(s) such contaminants or pollutants which would backflow or back-siphon into the public water supply system.

(2) Promote the elimination or control of existing cross-connections, actual or potential, between its customers' in-plant potable water system(s) and nonpotable water systems, plumbing fixtures and industrial piping systems.

(3) Provide for the maintenance of a continuing program of cross-connection control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

B. Responsibility. The Public Works Director shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through the water service connection. If, in the judgement of said Public Works Director, an approved backflow prevention device is required at the city's water service connection to any customer's premises for the safety of the water system, the Public Works Director shall give notice in writing to said customer to install such an approved backflow prevention device at each service connection to his premises. The customer shall immediately install and maintain such approved device or devices at his own expense, and failure, refusal or inability on the part of the customer to install and maintain said device or devices immediately shall constitute a ground for discontinuing water service to the premises until such device or devices have been properly installed.

148-3. Definitions.

As used in this Article, the following terms shall have the meanings indicated:

AIR-GAP - The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood rim of said vessel. An approved "air-gap" shall be required by Water Department standards.

APPROVED - Accepted by the Public Works Director as meeting an applicable specification stated or cited in this Article or as suitable for the proposed use.

AUXILIARY WATER SUPPLY - Any water supply on or available to the premises other than the approved public potable water supply.

BACKFLOW - The flow of water or other liquids, mixtures or substances under pressure into distributing pipes of a potable water system from any source or sources other than its intended source.

BACKFLOW PREVENTER - A device or means designed to prevent backflow or siphonage.

BACK-SIPHONAGE - The flow of water or other liquids, mixtures or substances into the distributing pipes or a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

CONTAMINATION - An impairment of quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease.

CROSS-CONNECTION - Any physical connection or arrangement of piping or fixtures between two (2) otherwise separate piping systems, one of which contains potable water and the other nonpotable water or industrial fluids of questionable safety, through which or because of which backflow or back-siphonage may occur into the potable water system.

CROSS-CONNECTION CONTROL BY CONTAINMENT - The installation of an approved backflow prevention device at the water service connection to any customer's premises or the installation of an approved backflow prevention device on the service line leading to and supplying a portion of a customer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of cross-connection.

CROSS-CONNECTION, PROTECTED - A connection between a potable water system and a nonpotable water system with an approved backflow prevention device properly installed that will continuously afford the protection commensurate with the degree of hazard.

CUSTOMER, CONSUMER or USER - Any person who has legal title to or license to operate or habitate in a property at which water is sold and furnished from the water utility.

DOUBLE CHECK-VALVE ASSEMBLY - An assembly of two (2) independently operating approved check valves with tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

HAZARD, DEGREE OF - Derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

HAZARD, HEALTH - Any condition, device or practice in the water supply system and its operation which could create or, in the judgement of the Public Works Director, may create a danger to the health and well- being of the water consumer.

HAZARD, PLUMBING - A plumbing-type cross-connection in a consumer's potable water system that has not been properly protected by a vacuum breaker, air-gap separation or backflow prevention device. Unprotected plumbing type cross-connections are considered to be a health hazard.

HAZARD, POLLUTIONAL - An actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system, which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

HAZARD, SYSTEM - An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

INDUSTRIAL FLUIDS SYSTEM - Any system containing a fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, system, pollutional or plumbing hazard if introduced into an approved water supply.

POLLUTION - The presence of any foreign substances (organic, inorganic or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

PUBLIC WORKS DIRECTOR - The Director of the City of Dover Public Works Department or his designated agent.

REDUCED PRESSURE PRINCIPLE DEVICE - An assembly of two (2) independently operating approved check valves with an automatically operating differential relief valve between the two (2) check valves, tightly closing shut- off valves on either side of the check valves, plus properly located test cocks for the testing of the check and relief valves.

VACUUM BREAKER, PRESSURE - A device used to prevent back-siphonage and approved to be used under static line pressure.

WATER, NONPOTABLE - Water which is not safe for human consumption or which is of questionable potability.

WATER, POTABLE - Any water which, according to recognized standards, is safe for human consumption.

WATER SERVICE CONNECTIONS - The terminal end of a service connection from the public potable water system, i.e., where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the "service connection" shall mean the downstream end of the meter. "Service connection" shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

WATER SYSTEM - Considered as made up of two (2) parts: the utility system and the customer system.

A. The utility system shall consist of the source facilities and the distribution system and shall include all those facilities of the water system under the complete control of the utility, up to the point where the customer's system begins.

(1) The source shall include all components of the facilities utilized in the production, treatment, storage and delivery of water to the distribution system.

(2) The distribution system includes the network of conduits used for the delivery of water from the source to the customer's system.

B. The customer's system shall include those parts of the facilities beyond the termination of the utility distribution system which are utilized in conveying utility delivered domestic water to points of use.

WATER, USED - Any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the water purveyor.

148-4. Protection requirements; inspections; noncompliance; permits.

A. No water service connection to any premises shall be installed or maintained by the Water Department unless the water supply is protected as required by RSA 148 and this Article. Service of water to any premises shall be denied or discontinued by the Water Department if a backflow prevention device required by this Article is not installed, tested and maintained or if it is found that a backflow prevention device has been removed or bypassed or if an unprotected cross- connection exists on the premises. Service will not be restored until such conditions or defects are corrected. If it becomes necessary to discontinue water service to any customer's premises in violation of this Article, notice shall be provided in writing to said customer stating the reasons for such discontinuance and the date of such discontinuance. Said notice shall also provide that if the customer has any questions as to the reasons for such discontinuance, the customer may contact the Public Works Director; telephone: 742-4568; Public Works Garage; Dover, New Hampshire, 03820.

B. The customer's system should be open for inspection at all reasonable times to authorized representatives of the Water Department to determine whether cross-connections or other structural or sanitary hazards, including violations of this Article, exist. When such a condition becomes known, the Public Works Director shall deny or discontinue service to the premises subject to the provisions of notice as set forth in 148-4A above by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with state and city statutes relating to plumbing and water supplies and the regulations adopted pursuant thereto.

(1) If a violation of this Article becomes known which, in the opinion of the Public Works Director, constitutes an emergency whereby the public potable water distribution system is in immediate danger of extensive contamination, the provisions of notice set forth in 148-4A above may be dispensed with and the Public Works Director may cause the service to the premises to be immediately discontinued by providing for a physical break in the service line until the customer has corrected the violation.

(2) Payment for any service rendered by the City of Dover which is necessitated under the terms of this Article shall be the responsibility of the customer.

C. An approved backflow prevention device shall be installed on each service line to a customer's water system adjacent to and on the customer's side of the water meter and before the first branch line leading off the service line wherever the following conditions exist.

(1) In the case of premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source by the New Hampshire Water Supply and Pollution Control Commission, the public water system shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard.

(2) In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard.

(3) In the case of premises having an internal cross- connection that cannot be permanently corrected and controlled or intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross- connections exist, the public water system shall be protected against backflow from the premises by installing a backflow prevention device in the service line.

D. The type of protective device required under Subsection C(1), (2) and (3) shall depend upon the degree of hazard which exists, as follows:

(1) In the case of premises where there is an auxiliary water supply as stated in Subsection C(1) of this section; or where there is any material dangerous to health which is handled in a fashion as to create an actual or potential hazard to the public water system; or where there are unprotected cross-connections, either actual or potential, the public water system shall be protected by an approved air- gap separation or an approved reduced pressure principal backflow prevention device at the service connector.

(2) In the case of any premises where there is water or substance that would be objectionable but not hazardous to health if introduced into the public water system, the public water system shall be protected by an approved double check valve assembly.

(3) In the case of premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impracticable to make a complete implant cross-connection survey, the public water system shall

be protected against backflow or backsiphonage from the premises by the installation of a backflow prevention device in the service line. In this case, maximum protection will be required, that is, an approved air-gap separation or an approved reduced pressure principle backflow prevention device shall be installed in each service to the premises.

E. Any backflow prevention device required herein shall be of a model and size approved by the Public Works Director. The term "approved backflow prevention device" shall mean a device that has been manufactured in full conformance with the standards established by the American Water Works Association, entitled "AWWA C506-78, Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices," and has met completely the laboratory and field performance specifications of the foundation for cross-connection control and hydraulic research of the University of Southern California established by Specifications of Backflow Prevention Devices, No. 69-2, dated March 1969, or the most current issue, and is on the approved list of backflow preventers and double check valves as revised by the New Hampshire Water Supply and Pollution Control Commission. Said American Water Works Association and Foundation for Cross-Connection Control and Hydraulic Research standards, specifications and approved list have been adopted by the Public Works Director. Final approval shall be evidenced by a certificate of approval issued by an approved testing laboratory certifying full compliance with said American Water Works Association standards and Foundation for Cross-Connection Control and Hydraulic Research specifications. The following testing laboratory has been qualified by the Public Works Director to test and certify backflow preventers. Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, University Park, Los Angeles, California, 90007. Testing laboratories other than the laboratory listed above will be added to an approved list as they are qualified by the New Hampshire Water Supply and Pollution Control Commission. Backflow preventers which have been subjected to back pressure or back-siphonage that have been fully tested and have been granted a certificate of approval by said qualified laboratory and are listed on the New Hampshire Water Supply and Pollution Control Commission's current list of approved devices may be used without further test or qualification.

F. All owners of backflow prevention devices must have a permit for each device required under Subsection C of this Article. The permit will be supplied by the water utility and renewed every five (5) years. Also, all permits shall be subject to revocation by the water utility if the hazard classification changes.

G. It shall be the duty of the customer-user at any premises where backflow prevention devices are installed to have certified inspections and operational tests made as required under New Hampshire RSA 148.27. These inspections

and tests shall be at the expense of the water user and shall be performed by the Water Department personnel or by a certified tester approved by the Public Works Director to see that these timely tests are made. The Public Works Director shall notify the customer user in advance when the tests are to be undertaken so that he or his representatives may witness the test if so desired. These devices shall be repaired, overhauled or replaced at the expense of the customer-user whenever said devices are found to be defective. Records of such tests shall be kept by the Public Works Director.

H. All presently installed backflow prevention devices which do not meet the requirements of this section but were approved devices for the purposes described herein at the time of installation and which have been properly maintained shall, except for the inspection, maintenance and permit requirements under Subsections F and G, be excluded from the requirements of these rules so long as the Public Works Director is assured that they will satisfactorily protect the utility system. Whenever the existing device is moved from the present location or requires more than minimum maintenance or when the Public Works Director finds that the maintenance constitutes a hazard to health, the unit shall be replaced by a backflow prevention device meeting the requirements of this section.